Claims:

1 – 15 (canceled)

16. (currently amended) A method of combusting a dual gas/liquid fuel in a catalytic combustion system, comprising:

providing a catalytic burner in a combustion air flow, wherein the catalytic burner comprises ~~with~~ a dual gas or liquid fluid fuel supply, and the fuel supply is positioned upstream of a fuel outlet of a primary burner with respect to the direction of the combustion air flow;

reacting ~~the~~ fuel supplied by the catalytic burner fuel supply in a catalytic pre-reaction by exposing the fuel ~~and the air flow~~ to the catalytic burner;

directing the pre-reacted fuel ~~and air flow via a swirling component~~ into a main burner flow channel at an angle of 15° to 75° relative to the direction of combustion air flow, wherein the angle is effective to impart a swirl to the pre-reacted fuel in the flow channel; and

continuing to burn the pre-reacted fuel in a secondary reaction located in the primary burner located downstream of the pre-reaction.

17. (previously presented) The method as claimed in claim 16, wherein the pre-reacted fuel flow is directed into a combustion space where a vortex is created, and the secondary reaction occurs in the vortex.

18. (previously presented) The method as claimed in claim 17, wherein the combined length of the catalytic burner, primary burner and combustion space are determined based on a dwell time of the pre-reacted fuel.

19. (previously presented) The method as claimed in claim 18, wherein the catalytic burner, primary burner and combustion space are arranged next to each other in sequence along a path of the air flow.

20. (previously presented) The method as claimed in claim 19, wherein the secondary reaction is a homogeneous non-catalytic reaction.

21. (previously presented) The method as claimed in claim 20, wherein the fuel is completely burned in the secondary reaction.

22. (previously presented) The method as claimed in claim 21, wherein the dual gas/liquid fuel is either a fuel gas or a fuel oil.

23. (previously presented) The method as claimed in claim 22, wherein the fuel is a fuel gas during a first operating mode of the catalytic combustion system and is a fuel oil during a second operating mode catalytic combustion system.

24. (currently amended) A burner for burning a dual gas/liquid fuel, comprising:

a primary burner ~~having~~ comprising a primary flow channel, wherein the primary flow channel comprises a primary flow channel outlet, ~~a dual gas/liquid fuel inlet and a dual gas/liquid fuel outlet~~; and

a catalytic burner located within a combustion air flow channel, having a catalytically effective element arranged to direct ~~the~~ pre-reacted fuel ~~and air flow~~ into the primary flow channel via a catalytic burner fuel outlet at an angle between 15° to 75° relative to ~~the~~ a direction of flow of combustion air in the primary flow channel to create a vortex in the primary flow channel, wherein ~~a~~ the catalytic burner fuel outlet ~~of the catalytic burner~~ is positioned upstream of the ~~fuel~~ primary flow channel outlet ~~of the primary burner~~ with respect to the direction of flow of the fuel within the primary flow channel and the fuel is catalytically reacted via exposure to the catalytically effective element.

25. (previously presented) The burner as claimed in claim 24, wherein the fuel is a fuel gas during a first operating mode of the catalytic burner and is a fuel oil during a second operating mode of the catalytic burner.

26. (currently amended) The burner as claimed in claim 25, wherein the catalytic burner comprises a plurality of flow channels, a catalytic burner fuel output for each flow channel, and at least one catalytically effective element per catalytic burner output. ~~has a plurality of catalytically effective elements.~~

27. (previously presented) The burner as claimed in claim 26, wherein the catalytically effective element is a honeycomb catalytic converter.

28. (previously presented) The burner as claimed in claim 27, wherein the honeycomb catalytic converter basic component is selected from the group consisting of titanium dioxide, silicon oxide and zirconium oxide.

29. (previously presented) The burner as claimed in claim 28, wherein the honeycomb catalytic converter catalytically active component is a noble metal or metal oxide which has an oxidizing effect on the fluid fuel.

30. (previously presented) The burner as claimed in claim 29, wherein the vortex created by the catalytically effective elements is located downstream of the primary burner fuel outlet.

31. (previously presented) The burner as claimed in claim 30, wherein the catalytically effective elements are arranged in a plane perpendicular to the direction of flow, and the fuel outlet of the catalytically effective elements discharges into the flow channel.

32. (previously presented) The burner as claimed in claim 31, wherein the combined length of the catalytic burner, primary burner and flow channel are determined based on a dwell time of the pre-reacted fuel.

33. (previously presented) The burner as claimed in claim 32, wherein the catalytic burner, primary burner and flow channel are arranged next to each other in sequence along a path of the air flow.

34. (currently amended) A combustion chamber for a dual gas/liquid fuel gas turbine engine, comprising:

a combustion chamber housing having an inward side and an outward side;

a combustion chamber wall formed on the inward side of the combustion chamber;

a plurality of heat resistant elements affixed to an interior of the combustion chamber wall that define a combustion air flow channel;

a primary burner having a first annular flow channel comprising a first annular ~~dual fuel~~ outlet and a second annular flow channel concentric with and surrounded by the first annular flow channel and comprising a second annular outlet; ~~and~~

a first catalytic burner located within ~~the~~ a combustion air flow channel having ~~a plurality of~~ a first catalytically effective elements and a first fuel outlet in fluid communication with the first annular flow channel and inclined at an angle between 15° and 75° relative to a direction of a combustion air flow and effective to create a vortex in the first annular flow channel, wherein ~~a~~ the first fuel outlet ~~of the catalytic burner~~ is positioned upstream of the first annular ~~primary burner fuel~~ outlet with respect to the direction of flow of a first fuel within the first annular flow channel and the first fuel is catalytically pre-reacted by exposure to the first catalytically effective element; and

a second catalytic burner located within the combustion air flow channel having a second catalytically effective element and a second fuel outlet in fluid communication with the second annular flow channel and inclined at an angle between 15° and 75° relative to a direction of a combustion air flow and effective to create a vortex in the second annular flow channel, wherein the second fuel outlet is positioned upstream of the second annular outlet with respect to the direction of flow of a second fuel within the second annular flow channel and the second fuel is catalytically pre-reacted by exposure to the second catalytically effective element, and

wherein subsequently a homogeneous non-catalytic secondary reaction is ignited downstream of the primary burner fuel outlet.

35. (previously presented) The combustion chamber as claimed in claim 34, wherein the fuel is either a fuel gas or a fuel oil.